

Response Under 37 CFR 1.116
Expedited Procedure
Examining Group 2878

Remarks

Rejections – 35 USC 112(1) and (2)

The Examiner has objected to claims 51-53, 62-79, and 81-83 under 112(1). Claims 51-53, 67, 68, 79 and 83 are rejected for including new matter. Although we have reformulated these claims, we also show that there is no new matter; see the remark to the claim amendments for claim 51.

Regarding claims 63 through 78, the new matter objection is dealt with in the remarks to claim 63.

There are also objections as to indefiniteness. These objections have been dealt with in the remarks concerning the claim amendments. This is also true for the new matter objection regarding claim 62 and claims 81 and 82.

Remarks Concerning the Claims Amendments

Claim 43:

In the original description, page 1, paragraph 2, scanning electron microscopes, force microscopes and light scanning microscopes have been named as imaging and/or raster-mode scanning apparatus. It is well known that scanning microscopes have an electron beam or a light beam travelling across the sample object whereas a force microscope has a point or peak travelling across the sample object and can be termed “means for determining a force onto the sample object”.

In order to have an antecedent basis for claim 59, we have formulated a Marcus group for properly defining the scanning apparatus.

When the scanning beam or point travels across the sample object, pixels of the sample object are acquired. These pixels or picture elements make the image which is produced by the

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scanning apparatus. This is well-known technology, and we have used simple language in amended claim 43 for these facts in writing "means for forming an image when the position of one of said electron beam, light beam, or force determining means is moved relatively to said sample object and optionally to a predetermined reference object so as to produce image signals".

We have defined the image degradation by saying that "the ambient influences might interfere with proper imaging".

These image degradations can be compensated to a certain extent. Accordingly, we have amended claim 43 as explained.

Claim 50:

Since we have amended claim 43, there is a proper antecedent basis for "said relative position" (when the position of one of said electron beam, light beam or force determining means is moved relatively to said sample object and optionally to a predetermined reference object).

We have omitted the wording "at least one of ... and of time controlled by the scanner" from claim 50.

Claim 51:

This claim is related to claim 43 wherein image signals have been defined.

On page 12 of the original description, the calibration mode is described. In lines 31-34 we find scanning the reference object, which means producing image signals of the reference object.

Lines 35, 36 recite: "comparison of the acquired image with the real structure of the reference object".

"The acquired image" means image signals, and it is quite clear that image signals can

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only be compared with other image signals. These image signals have been stored previously (see page 11, line 35, and page 12, lines 18, 19) and relate to "the real structure" of the reference object, that is, as obtained without degradations. We have amended claim 51 by using simple language "a first image signal" for the image of the real structure, and "a second image signal" for the image of the reference object under ambient influences.

Claim 52:

We have adapted the wording of claim 52 to that of claim 51 (currently amended).

Claim 55:

We have written "said image forming means" which has a proper antecedent basis in claim 43.

Claim 59:

In amending claim 43, we have given a proper antecedent basis for claim 59.

Claim 61:

We have written "optical scanning microscope" instead of "light microscope".

Claim 62:

The language has been amended to relate to a light microscope.

This means that the camera system is for forming an image of the sample object, and there is means for converting the image of the sample object into image signals. We have given definitions to the first signal and the second signal by stating where they are to be supplied. We also replaced the language "such that image degradations acquired by the image acquirer are greatly reduced or essentially compensated" with "to a certain extent" as in amended claim 43.

Claim 63:

We have defined that the apparatus includes an internal actuator or internal control

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element and an image processor.

For the disclosure thereof see original page 4, lines 5-8:

“The actuators and control elements used may preferably be **internal ones** that are present, for example deflection systems or adjustment arrangement of sample stages.”

In other words, the deflection system for the electron or light beam is an actuator internal of the imaging or raster mode scanning apparatus, in contrast to one which is outside such apparatus and used for compensating vibrations by moving the apparatus in push-pull manner, as with prior art cited by the Examiner. The internal actuator can also be associated with moving the sample object, given in the English text as “adjustment arrangements of sample stages” which also is of internal nature. Furthermore, “it is also possible to realise the compensation of the imaging defects by driving a control element in an image processing device” as written on original page 4, lines 13-16. This control element is clearly of internal nature and further described in connection with the embodiment of Fig. 8, see page 18, line 36, to page 19, first paragraph. In this embodiment, the image signals stored in the image processor and giving rise to image degradations are converted with the help of the internal control element into image signals which are displayed in the display device and with such conversion are processed to compensate for the ambient influences. Therefore, it is quite clear that such control element is of internal nature as described on original page 4.

For completing the teaching of claim 63, we have inserted that there is a driving signal driving the actuator or control element to produce an image of the sample object. We have also made it clear that such driving signal is combined with the output signal of the electrical filter, that is, the driving signal is modified by the output signal of the electrical filter so as to effect the compensation.

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We have also amended the language "greatly reduced or essentially compensated".

Claim 67:

We have reformulated claim 67 so that the steps follow in a timely correct order. Similar to claim 51, we also have defined "a first image signal" and "a second image signal" of the reference object which are compared to produce the second signal for calibrating the electrical filter.

Claim 68:

We have completed the method steps by defining how the first image signal of claim 67 is obtained. See also the remarks to claim 51. We also have used the term "second image signal" conforming to claim 67 as the antecedent basis. We also have mentioned the internal nature of the actuator where claim 63 offers the antecedent basis. We have omitted the term "sample object" from claim 68, since not needed here, though the internal actuator is used for scanning both, the sample object and the reference object.

Claim 69:

This claim relates to the image mode referred to in claim 67 and gives the further details. There is only one internal actuator or control element, namely that of claim 63.

Claim 75:

This claim has to do with analyzing successive images of a sample object or a reference object. Accordingly, claim 75 has been reformulated, also to create a proper antecedent basis for "any image".

Claim 77:

The terms "greatly reduced or essentially compensated" have been replaced with "compensated to a certain extent".

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Claim 78:

The term "apparatus" has been completed by "imaging or raster-mode scanning apparatus".

Claim 79:

We have reformulated this claim similar to claim 51 so as to better show the operation of the apparatus.

Claim 81:

This claim finally depends from amended claim 43 where "the electron beam" has been defined.

Claim 82:

This claim finally depends from amended claim 43 where "the electron beam" has been defined.

Claim 83:

Amendments similar to claim 79 have been made so that a proper antecedent basis is given.

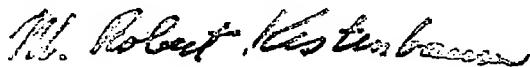
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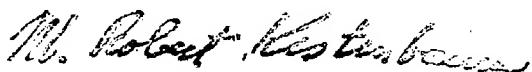
A one-month extension of time in which to respond to the outstanding Office Action is hereby requested. Credit Card Payment Form PTO-2038 is enclosed to cover the prescribed Small Entity one-month extension fee of \$55.00.

Respectfully submitted,



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I hereby certify this correspondence is being submitted to Commissioner for Patents, Washington, D.C. 20231 by facsimile transmission on September 6, 2004, fax number (703) 872-9306.



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